

On the Path to 330K EVs by 2025: The First Year of New Jersey's EV Law



Meet Our Speakers



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ChargEVC



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Environmental
Protection



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NJ Board of Public
Utilities



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NJCAR



On the path to 330,000 EVs:
The First Year of NJ's EV Law

October 26, 2020

Who we are

- DIVERSE GROUP OF ALIGNED INTERESTS.

What we will do

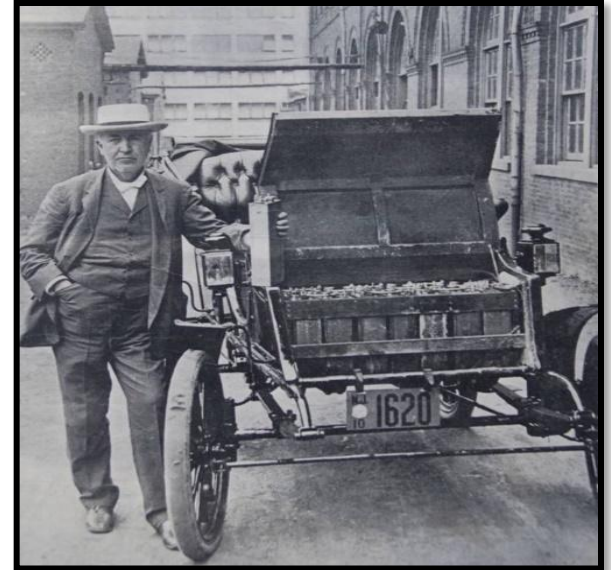
- Accelerate and expand EV adoption in PA.
- Develop and promote **programs and policies**

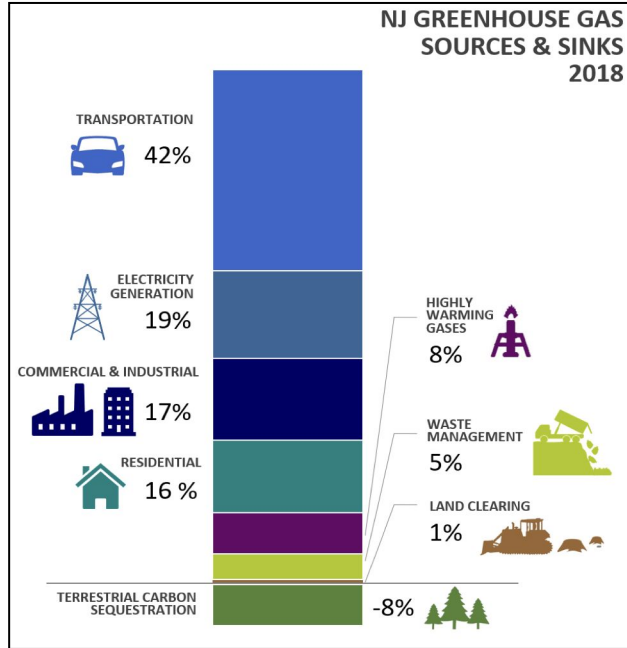
How we do it

- **RESEARCH** necessary to inform programs and policies.
- Diverse coalition with unified voice for **ADVOCACY**.

State based approach

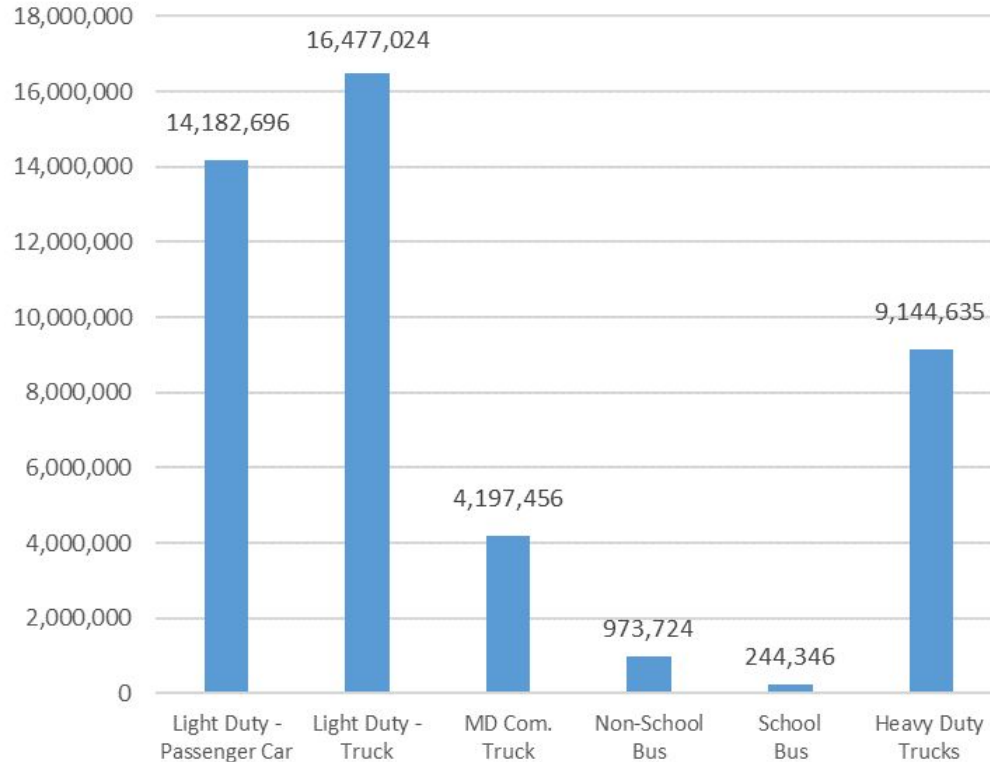
- Local market participants, for local action, based on local conditions.



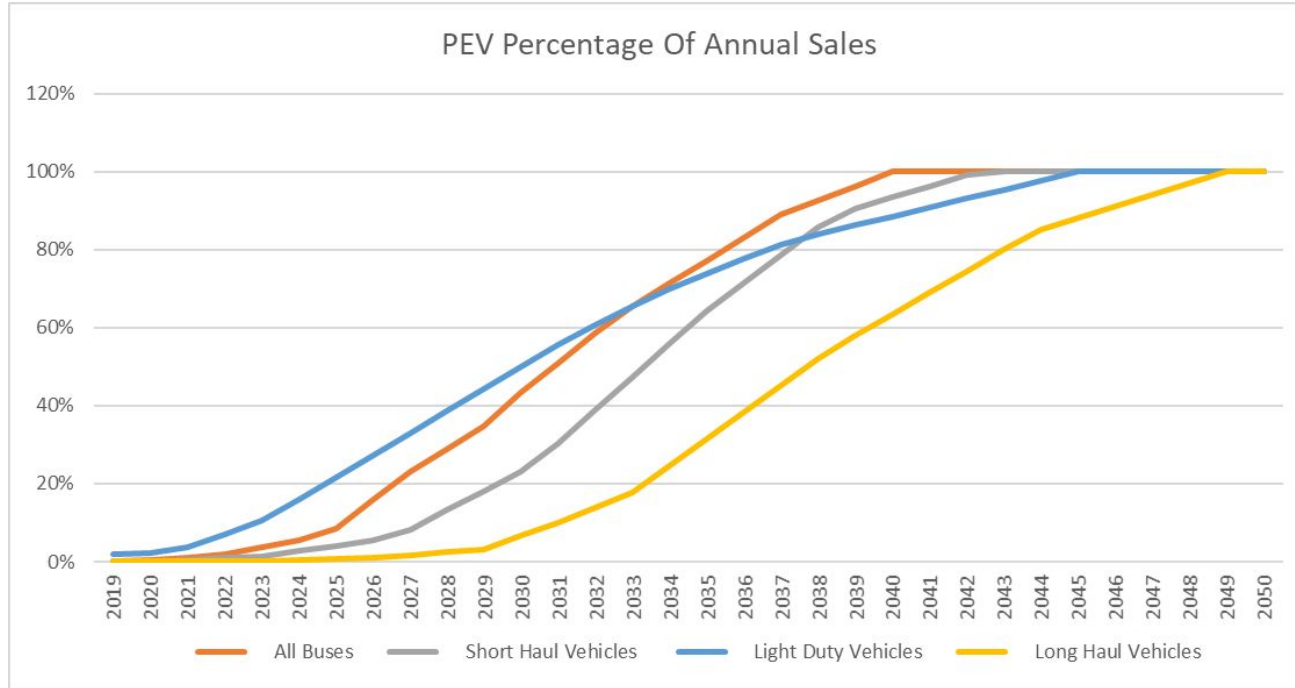


New Jersey Greenhouse Gas Sources and Sinks by Sector. (NJDEP 2019a).
www.nj.gov/dep/climatechange/docs/nj-scientific-report-2020.pdf#page=34

Tons of CO2 Emissions in New Jersey (2019)



How fast and what we need to electrify to meet emissions goals: This schedule, quantified in terms of the percentage of new sales that are electrified each year, is summarized in the chart below.





Website: www.chargevc.org

Email: info@chargevc.org

Phone: 732-296-0770



STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION

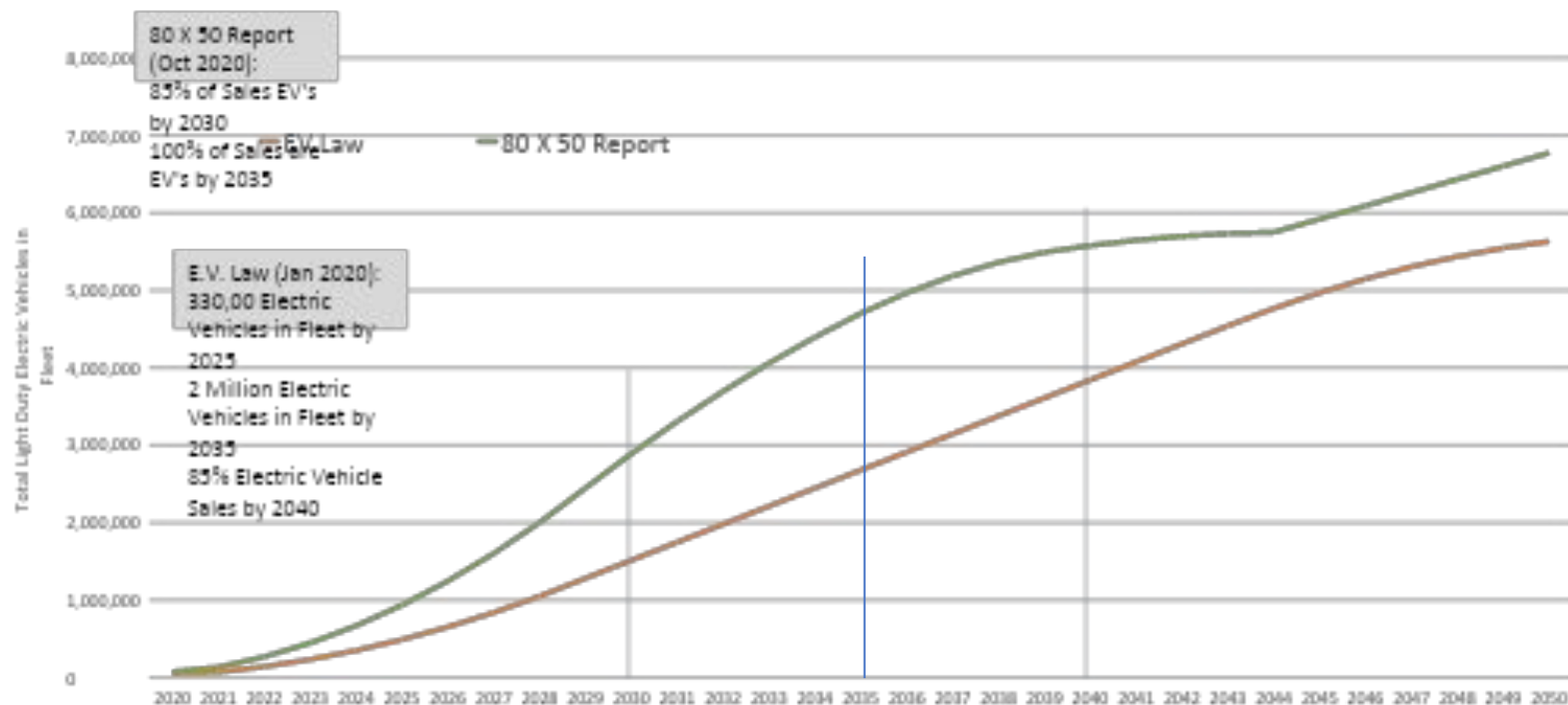


TRANSPORTATION ELECTRIFICATION: GETTING TO 2050

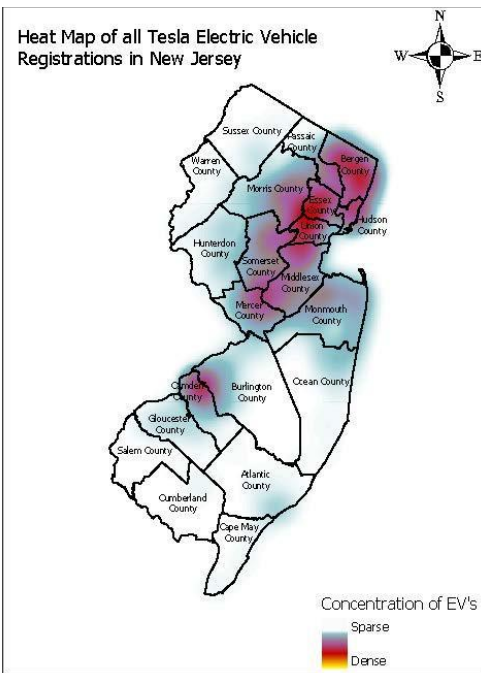
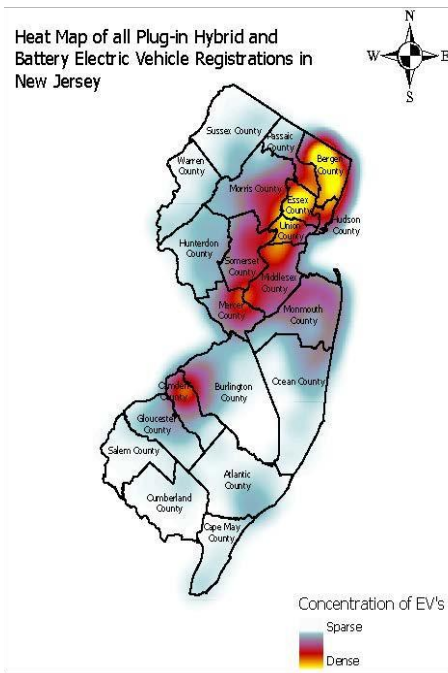
Peg Hanna, Assistant Director
Division of Air Quality
NJDEP



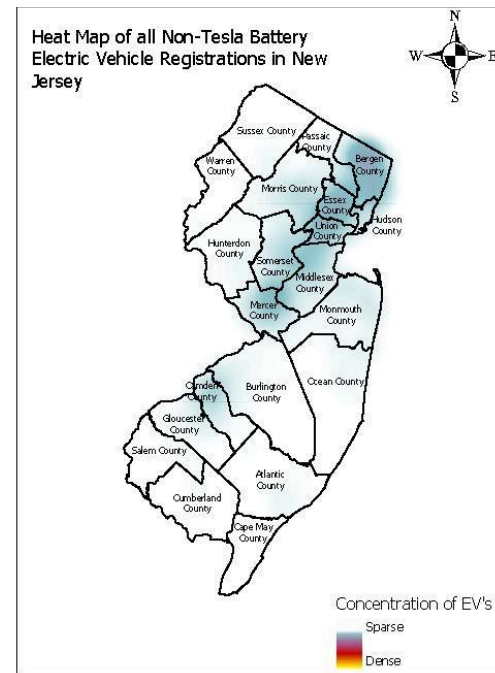
Light Duty Electrification Goals



Electric Vehicle Registrations (June 2019)



84% of BEVs are Tesla



Remainder of BEVs are about 5% Chevy Bolt, 5% Nissan Leaf, 2.5% BMW i3, 3.5% everything else

It Pay\$ to Plug In

NJDEP's Grant Program for EV Charging Stations

Up to \$4,000 per port for Level 2 chargers at public places, workplaces (including fleets), multi-family homes, and shared mobility.

NEW!!!

Up to \$200,000 per location for public DC fast chargers along major roadways.



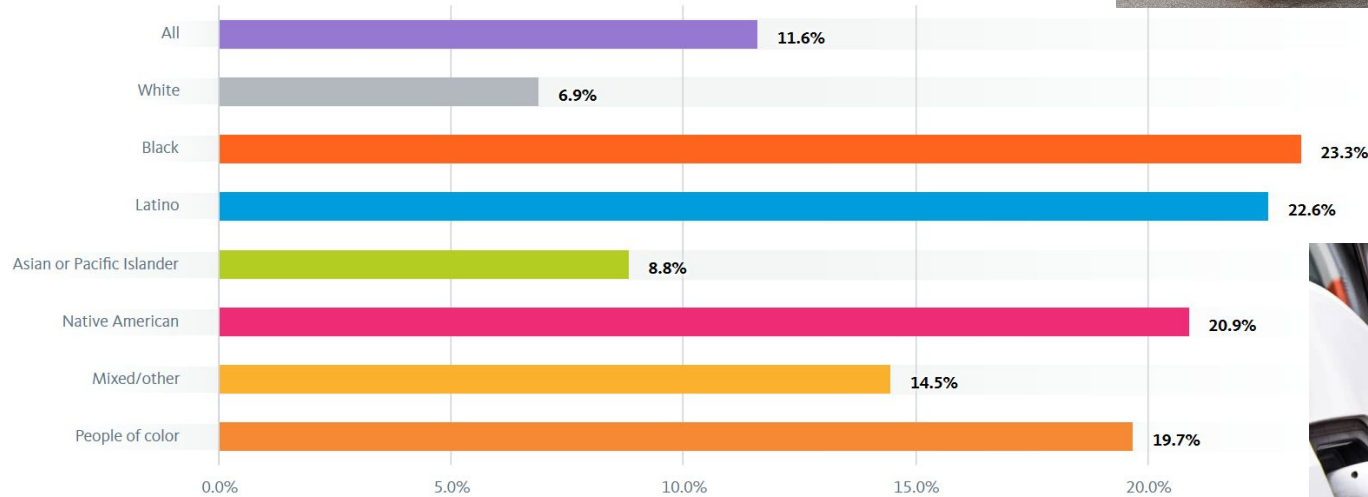
PlugStar[™]
by Plug In America

dri[⚡]ve green
new jersey



Electrification equity

Percent of households without a vehicle by race/ethnicity: New Jersey, 2015



IPUMS



Uber Green



MULTI-STATE MEDIUM- AND HEAVY-DUTY ZERO EMISSION VEHICLE

MEMORANDUM OF UNDERSTANDING

WHEREAS, the Signatory States and the District of Columbia¹ recognize the importance of state leadership and coordinated state action to ensure national progress in the effort to reduce greenhouse gas (GHG) emissions and stabilize global warming;

WHEREAS, the Signatory States have statutory obligations or otherwise seek to significantly reduce statewide GHG emissions by 2050, consistent with science-based targets;

WHEREAS, transportation is now the nation's largest source of GHG emissions, and, after light-duty vehicles, medium- and heavy-duty trucks are the next largest source of transportation sector GHG emissions;

WHEREAS, the Signatory States have a statutory obligation to provide their citizens with air quality that complies with national health-based air quality standards, which are required to be protective of health and the environment with an adequate margin of safety;

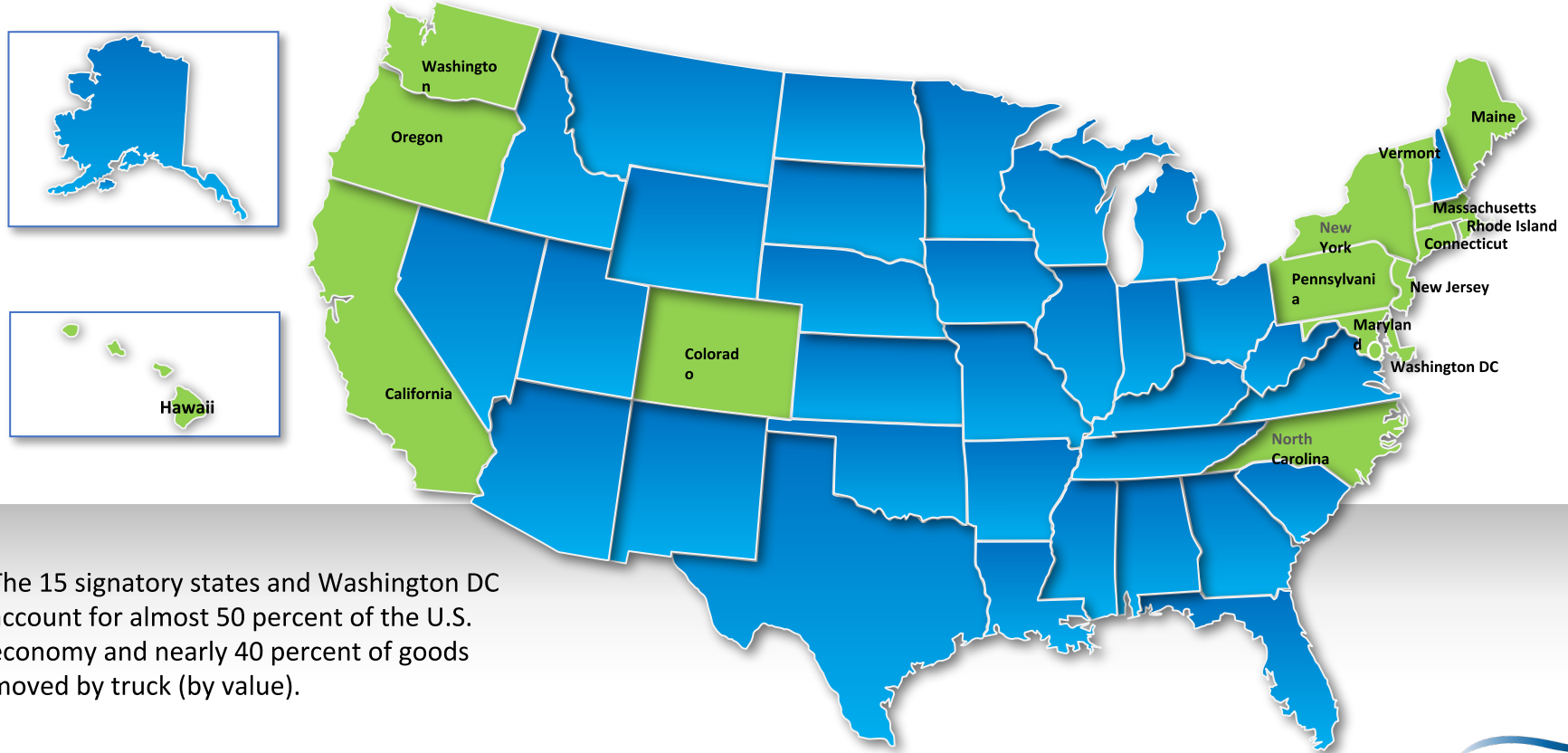
WHEREAS, fossil fuel related emissions from medium- and heavy-duty vehicles (MHDVs) are a major source of nitrogen oxides (NOx), particulate matter, and toxic air emissions, which are preventing many densely populated areas from achieving compliance with federal ambient air quality standards;

WHEREAS, emissions from MHDVs are a widely acknowledged, but unaddressed, environmental justice problem that directly and disproportionately impacts disadvantaged communities located near freight corridors, ports and distribution centers;

Medium- and Heavy-Duty Zero Emission Vehicle MOU

- Builds off success of 2013 governors MOU and subsequent Action Plans for light-duty vehicles.
- Commits signatories to work together to foster a self-sustaining market for zero emission medium- and heavy-duty vehicles.
- Calls for 30% of new truck and bus sales to be zero-emission by 2030 and 100% by 2050.
- Emphasizes need to accelerate deployment of zero-emission trucks and buses in disadvantaged communities.
- Directs development and implementation of a MHD ZEV Action Plan.

MHD ZEV MOU Signatories



The 15 signatory states and Washington DC account for almost 50 percent of the U.S. economy and nearly 40 percent of goods moved by truck (by value).




















Sources:

U.S Bureau of Economic Analysis

<https://apps.bea.gov/itable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1;>

Vehicles affected

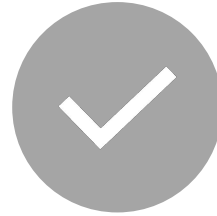
Source: U.S. Department of Energy

Class 1 - 6,000 lbs & Less
   
Minivan Cargo Van SUV Pickup Truck
Class 2 - 6,001 to 10,000 lbs
   
Minivan Cargo Van Full-Size Pickup Step Van
Class 3 - 10,001 to 14,000 lbs
   
Walk-in Box Truck City Delivery Heavy-Duty Pickup
Class 4 - 14,001 to 16,000 lbs
  
Large Walk-in Box Truck City Delivery
Class 5 - 16,001 to 19,500 lbs
  
Bucket Truck Large Walk-in City Delivery
Class 6 - 19,501 to 26,000 lbs
   
Beverage Truck Single-Axe School Bus Rack Truck
Class 7 - 26,001 to 33,000 lbs
   
Refuse Furniture City Transit Bus Truck Tractor
Class 8 - 33,001 lbs & Over
   
Cement Truck Truck Tractor Dump Truck Sleeper

Key considerations in setting sales targets



Total cost of ownership
parity



CARB analysis & rule



Product availability &
fleet announcements



Estimating # vehicles
required to meet interim
sales target



Volkswagen Settlement



**\$72.2 million including
\$10.8 million for EV charging**



BOSCH

Invented for life

VIOLATION





STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION



THANK YOU!

Peg Hanna, Assistant Director
Division of Air Quality, NJDEP

Peg.hanna@dep.nj.gov



New Jersey's EV Incentives



October 26, 2020

New Jersey's
Clean Energy Program™

Lighting the way to New Jersey's Clean Energy Future

EVs in the Energy Master Plan

- The EMP's first strategy and goal is: **“Reduce Consumption and Emissions from the Transportation Section”**
- Goal of 330,000 light duty electric vehicles by 2025
- Charging infrastructure
- State light-duty fleet
- Increase transportation options, encourage new options
- Decrease “Vehicle Miles Traveled”
- Reduce Port emissions

Electric Vehicle (EV) Overview

- In June 2019, Gov. Murphy signed an MOU outlining NJBPU's role in encouraging electric vehicle use in New Jersey
- Under this MOU, NJBPU will:
 - Consider how to utilize Clean Energy Program funds to finance Zero Emission Vehicles (ZEV) charging infrastructure deployment and mapping
 - Consider how to dedicate funds to create an incentive program to encourage NJ consumers to buy and lease new and used ZEVs
 - Track usage and electric consumption from charging infrastructure

The Electric Vehicle Law (S2252)

- Signed on January 17, 2020 by Governor Murphy, this law establishes the following goals:
 - At least 330,000 EVs on New Jersey roads by December 31, 2025 at least 2 million EVs by December 31, 2035
 - At least 85% of all new light duty vehicles sold or leased in the State shall be EVs by December 31, 2040
 - By December 31, 2025, there must be 400 DC Fast Chargers and 1,000 Level Two chargers available to the public

The Electric Vehicle Law (S2252)

In addition:

- By December 31, 2025, at least 15% of multi-unit dwellings must have a combination of Level One, Level Two, or charger ready (“Make Ready”) parking spaces
- By December 31, 2025, 20% of all franchised overnight lodging establishments shall be equipped with EV chargers for routine electric vehicle charging by guests of the establishment
- By December 31, 2025, at least 25% of State-owned non-emergency light duty vehicles shall be plug-in electric vehicles
- By December 31, 2024, at least 10% of the new bus purchases made by the New Jersey Transit Corporation shall be zero emission buses
- The percentage of zero emission bus purchases shall increase to 50% by December 31, 2026 and 100% by December 31, 2032 and thereafter

Charge Up New Jersey

ChargeUp.NJCleanEnergy.com

- Developed in accordance with the EV Law, which dedicated \$30M annually for the Plug In Electric Vehicle Fund, for 10 years
- New Jersey residents can receive an incentive of up to **\$5,000** when they purchase or lease a new electric vehicle in the State of New Jersey
- The online portal to apply for this post-purchase incentive launched on May 27, 2020
- Point of Sale incentive - Coming Soon

Charge Up New Jersey

ChargeUp.NJCleanEnergy.com

Program Requirements

To apply for the Charge Up New Jersey incentive, a purchase or lease must meet the following requirements:

- Vehicle must have a purchase/lease agreement dated January 17, 2020 or later
- Vehicle must be registered to a New Jersey resident
- The individual's name must be on the purchase or lease agreement
- Purchase or lease agreement must be from a New Jersey dealership or showroom
- Proof of New Jersey residency is required by providing a New Jersey State ID

Charge Up New Jersey

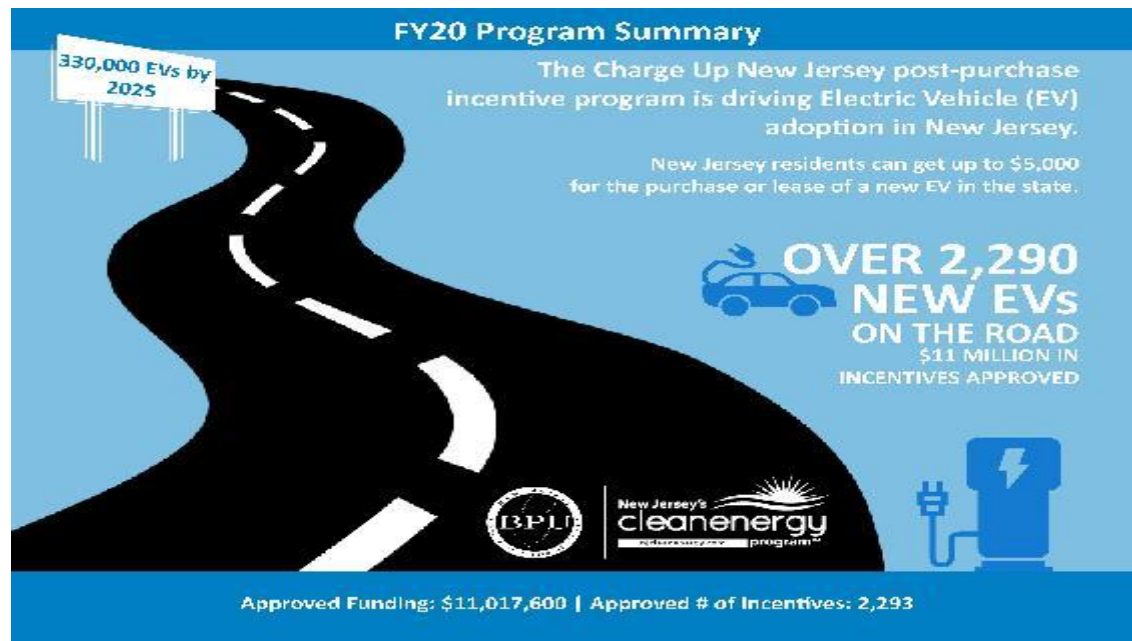
ChargeUp.NJCleanEnergy.com

Additionally, the vehicle must:

- Be a new battery electric or plug-in hybrid electric vehicle; and
- Have an MSRP* of less than \$55,000



FY 20 Summary



EVs for Underserved Communities

- This grant from the U.S. Department of Energy is focused on how to enhance EV adoption in urban areas and in underserved communities
- The project is currently researching EV car-sharing options and Plug-in Electric Vehicle (PEV)-based ride hailing options for urban areas

Clean Fleet Electric Vehicle Incentive Program

- Electric vehicles are now included on the State Purchasing Contract under Award T0099
- Clean Fleet Electric Vehicle Incentive Program
 - Designed to encourage local and state governments to add EVs to their fleet
 - \$4,000 per battery electric vehicle (maximum of 2); and
 - \$1,500 for one Level-Two EV charging station
 - Grants awarded on rolling basis until June 2021, or until funding expended
- Questions? EV.programs@bpu.nj.gov

Public Charging

- After public input was received on a Straw Proposal released in May 2020, the BPU created minimum standards for utility filings on light duty, public charging.
- Public charging is: available 24-7, on public land, community locations and traffic corridors, is accessible to all EV users and has prices visibly displayed.
- Utilities must submit a plan by February 28, 2021 which must include:
 - Application process for program for utilities to pay for “Make Ready”
 - Preference for private ownership and operation of public chargers
 - Utilities can apply to own and operate in areas of “last resort”
 - Address concerns about demand charges

How towns can encourage EV adoption

- Install a charger at town hall, community center, etc.
- Include EVs in municipal fleet
- Permit chargers as accessory use in Master Plan
- Host EV related events

More Information

CATHLEEN LEWIS

Outreach Coordinator
Cathleen.lewis@nj.bpu.gov

VISIT

NJCleanEnergy.com

NEWSLETTER

NJCleanEnergy.com/NEWSLETTER

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THANK YOU



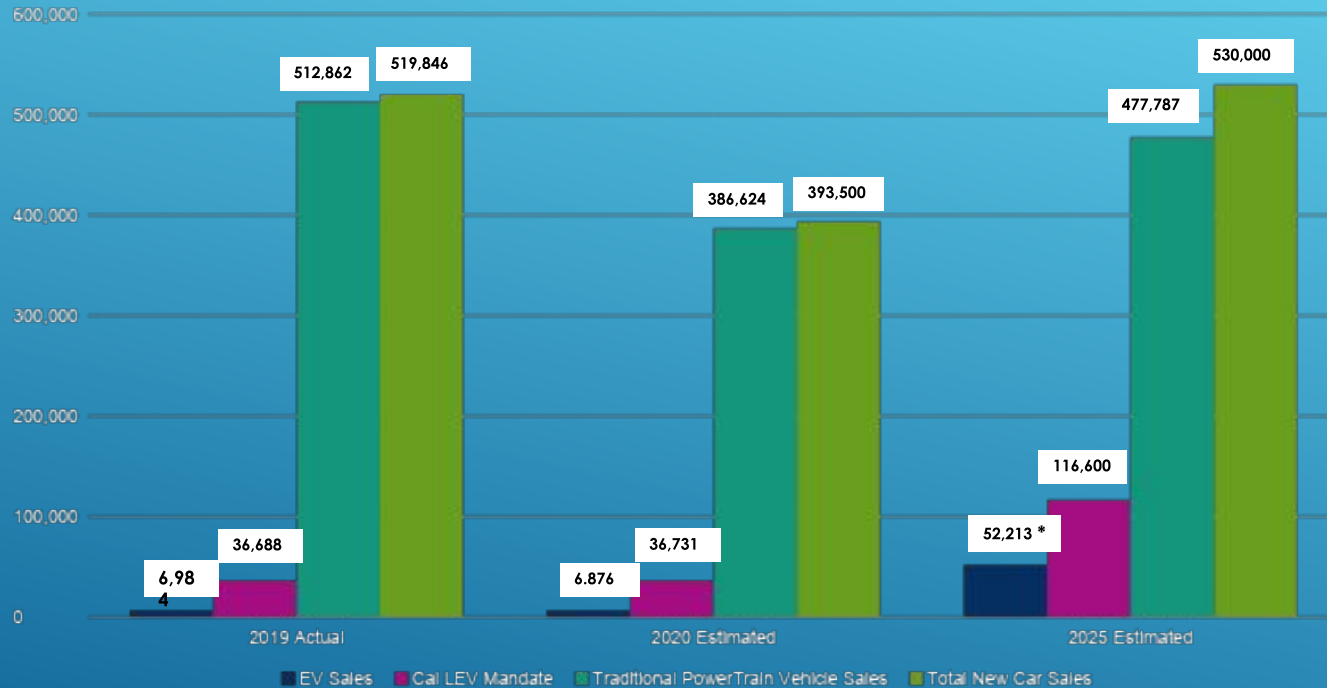
ON THE PATH TO 330,000 EVS BY 2025

OCTOBER 26, 2020

James B. Appleton, President



Vehicle Sales- Traditional vs. Alternative Powertrain



• * Based on 50% year-over-year growth from 2020 through 2025

Year-over-year increase would need to be 76% from 2020 through 2025 to hit the 116,600 Cal LEV mandate.



EV & PLUG-IN HYBRID MODELS CURRENTLY AVAILABLE

- Audi eTron
- BMW 530e
- BMW 745e
- BMW i3
- **BMW i8**
- Chevrolet Bolt
- **Chrysler Pacifica**
- Ford Fusion Energi
- **Honda Clarity**
- Hyundai Ioniq
- Hyundai Kona
- Hyundai Sonata PHEV
- Jaguar I-Pace
- Kia Niro EV
- Kia Niro PHEV
- Kia Optima PHEV
- Kia Soul EV
- Lincoln Aviator
- Mercedes Benz GLC 350e
- Mini Countryman
- Mitsubishi Outlander
- Nissan Leaf
- Porsche Cayenne S-E
- Porsche Panamera
- **Porsche Taycan**
- Ranger Rover PHEV
- **Smart EQ**
- **Subaru Crosstrek**
- Toyota Prius Prime
- Volkswagen e-Golf
- Volvo S60
- Volvo S90
- Volvo V60
- Volvo XC60
- Volvo XC90

EV MODELS COMING TO MARKET

(SOURCE: AUTOMOTIVE NEWS)

2020

- BMW5 Series
- Chrysler Pacifica Hybrid
- **Ford Mustang Mach E SUV**
- Jeep Wrangler
- Lincoln Corsair GT
- Volkswagen ID4
- Volvo XC40

2021

- Alfa Romeo compact crossover
- Audi E-tron GT
- Audi Q4 E-tron
- **Bentley Bentayga**
- BMW iNext

- BMW X3
- Chevrolet Bolt crossover
- Ferrari SF90 Stradale
- Genesis EV
- Hyundai Ioniq 5
- Hyundai Kona
- Kia electric crossover
- Lucid Air
- Mercedes Benz EQA
- Mercedes Benz EQB
- Mercedes Benz EQC
- Mercedes Benz EQS
- Mitsubishi Eclipse Cross
- Nissan Ariya
- Porsche Panamera Hybrid
- Porsche Taycan
- Volvo C40
- Volvo EX60

2022

- Alfa Romeo subcompact crossover
- BMW 7 Series
- BMW i4
- BMW X5
- **Cadillac Lyriq**
- Chevrolet Corvette
- Ford Escape
- Ford F-150 EV
- Hyundai Ioniq 6
- Jaguar I-Pace
- Jeep Grand Cherokee
- Land Rover Ranger Rover
- Land Rover Road Rover
- Maserati GranTurismo
- Maserati Grecale
- Maserati MC20

- Mercedes Benz EQE
- Mitsubishi Outlander
- Nissan Maxima
- Porsche 718 Boxster
- Porsche 718 Cayman
- Porsche Macan

2023

- Audi eTron
- BMW X8
- Buick electric large SUV
- Buick electric midsize crossover
- Cadillac Celestiq
- Cadillac large electric SUV
- Chevrolet electric pickup
- Ford/Lincoln midsize crossover
- **GMC Hummer**
- Jaguar EV

- Land Rover Discovery Sport
- Maserati Levante
- Maserati Quattroporte
- Mercedes Benz C-Class
- Nissan Leaf
- Porsche 911
- Toyota Prius/ Prius Prime
- Toyota-Subaru crossover
- Volkswagen ID Buzz

2024

- Audi Artemis
- Audi TT
- Buick small SUV
- Cadillac crossover
- Cadillac SUV
- Hyundai Ioniq 7
- Volkswagen U.S. EV

IMPEDIMENTS TO GREATER EV ADOPTION

- **PRICE**
- **RANGE ANXIETY**

PRICE GAP BETWEEN ICE & ELECTRIC VEHICLES

• 2019 Honda Civic LX-	\$22,500	
• 2019 Nissan Leaf S-	<u>\$38,550</u>	
		+\$16,050
• 2019 Toyota RAV4 XLE-	\$28,650	
• 2019 Hyundai Kona-	<u>\$44,900</u>	
		+\$16,250
• 2019 Subaru Legacy-	\$26,945	
• 2019 Chevrolet Bolt-	<u>\$41,020</u>	
		+\$16,745
• 2019 Audi A3-	\$34,500	
• 2019 BMW i3-	<u>\$51,500</u>	
		+\$17,000

PRICE GAP BETWEEN ICE & ELECTRIC VEHICLES

NJ Sales Tax

• 2019 Honda Civic LX-	\$22,500	+\$1,490	=	\$23,990
• 2019 Nissan Leaf S-	<u>\$38,550</u>	+\$0	=	<u>\$38,550</u>
	+\$16,050			+\$14,560
• 2019 Toyota RAV4 XLE-	\$28,650	+\$1,898	=	\$30,548
• 2019 Hyundai Kona-	<u>\$44,900</u>	+\$0	=	<u>\$44,900</u>
	+\$16,250			+\$14,352
• 2019 Subaru Legacy-	\$26,945	+\$1,785	=	\$28,730
• 2019 Chevrolet Bolt-	<u>\$41,020</u>	+\$0	=	<u>\$41,020</u>
	+\$14,075			+\$12,290
• 2019 Audi A3-	\$34,500	+\$2,285	=	\$36,785
• 2019 BMW i3-	<u>\$51,500</u>	+\$0	=	<u>\$51,500</u>
	+\$17,000			+\$14,715

PRICE GAP BETWEEN ICE & ELECTRIC VEHICLES

		Federal Tax <u>Credit</u>			
• 2019 Honda Civic LX-	\$23,990	- \$0	=	\$23,990	
• 2019 Nissan Leaf S-	<u>\$38,550</u>	- \$7,500 =		<u>\$31,050</u>	
	+\$14,560				+\$7,060
• 2019 Toyota RAV4 XLE-	\$30,548	- \$0	=	\$30,548	
• 2019 Hyundai Kona-	<u>\$44,900</u>	- \$7,500 =		<u>\$37,400</u>	
	+\$14,352				+\$6,852
• 2019 Subaru Legacy-	\$28,730	- \$0	=	\$28,730	
• 2019 Chevrolet Bolt-	<u>\$41,020</u>	- \$3,750 =		<u>\$37,270</u>	
	+\$12,290				+\$8,540
• 2019 Audi A3-	\$36,785	- \$0	=	\$36,785	
• 2019 BMW i3-	<u>\$51,500</u>	- \$7,500 =		<u>\$44,000</u>	
	+\$14,715				+\$7,215

PRICE GAP BETWEEN ICE & ELECTRIC VEHICLES

\$5,000 State
Incentive

• 2019 Honda Civic LX-	\$23,990	-\$0	=	\$23,990
• 2019 Nissan Leaf S-	<u>\$31,050</u>	-\$5,000	=	<u>\$26,050</u>
	+\$7,060			+\$2,060
• 2019 Toyota RAV4 XLE-	\$30,548	-\$0	=	\$30,548
• 2019 Hyundai Kona-	<u>\$37,400</u>	-\$5,000	=	<u>\$32,400</u>
	+\$6,852			+\$1,852
• 2019 Subaru Legacy-	\$28,730	-\$0	=	\$28,730
• 2019 Chevrolet Bolt-	<u>\$37,270</u>	-\$5,000	=	<u>\$32,270</u>
	+\$8,540			+\$3,540
• 2019 Audi A3-	\$36,785	-\$0	=	\$36,785
• 2019 BMW i3-	<u>\$44,000</u>	-\$5,000	=	<u>\$39,000</u>
	+\$7,215			+\$2,215

REGULATORY & LEGISLATIVE ROLE

- Current law says that EVs and other alternative fuel vehicles need only be “delivered for sale” for the manufacturer to earn clean car credits.
- NO requirement that the vehicle be SOLD.
- Changing the “delivered for sale” requirement to “put in service” before clean credits could be earned would incentivize manufacturers to price and equip vehicles that consumers want (and can afford) to buy.

ADDRESSING RANGE ANXIETY

- Average driver puts about 40 miles on their vehicle each day.
- ICE vehicle gets anywhere from 300-400 miles on a full tank of gas.
- Some hybrids get as much as 500 miles.
- Fully charged EV gets 200-250 miles; models that can reach 300-400 miles on a full charge are already on the market and more are coming soon.

ADDRESSING RANGE ANXIETY

- About 415 electric charging stations in New Jersey with 1,230 outlets
- Approximately 3,500 gas stations with 20,000+ gas pumps

HOW DO WE GET MORE EVS ON NEW JERSEY ROADS?

- Cash-on-the-Hood incentives to encourage consumers to purchase vehicles that are being mandated.
- A much more robust and extensive charging infrastructure.
- Force manufacturers to price and equip vehicles that consumer want (and can afford) to buy.